

Integrating Tourism and Circular Economy Strategies: A Study on Fashion Waste Reduction and Consumer Sustainability Awareness in Melaka

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ABSTRACT

The global fashion industry is a significant contributor to environmental degradation, primarily driven by fast fashion practices that encourage overproduction, overconsumption, and increased textile waste. In Malaysia, the convergence of rising consumerism and tourism-led retail expansion has exacerbated fashion waste, particularly in Melaka, a UNESCO World Heritage City and leading cultural tourism destination. This study investigates the integration of tourism development and circular economy (CE) strategies using qualitative methods to address fashion waste reduction and enhance consumer sustainability awareness within Melaka's unique socio-economic context. Grounded in sustainability frameworks and the Theory of Planned Behavior, the study employs semi-structured interviews, focus groups, and case analyses involving key stakeholders, including policymakers, local retailers, tourists, and artisans. The findings highlight tourism's dual impact: while contributing to fast fashion consumption, it simultaneously offers a platform for promoting heritage-inspired sustainable fashion. Key enabling factors identified include government policy support, community engagement, and culturally relevant sustainability education. This study positions Melaka as a potential model for localized, tourism-integrated circular fashion systems, offering practical insights for policymakers, tourism authorities, and entrepreneurs seeking to foster sustainable development in heritage destinations globally.

Keywords: Circular Economy, Consumer Behavior, Fashion Waste, Sustainable Tourism, Heritage Cities, Sustainable Fashion

INTRODUCTION

The fashion industry, globally recognized for its economic contribution, is simultaneously a major contributor to environmental degradation. Fast fashion is a business model characterized by rapid production, low-cost garments, and disposable consumption patterns has intensified textile waste, resource depletion, and carbon emissions (Niinimäki et al., 2020). According to the Ellen MacArthur Foundation (2017), over 92 million tons of textile waste are generated annually, underscoring an urgent need for systemic transformation. In Malaysia, rising affluence, the ubiquity of e-commerce, and the influence of global fashion trends have accelerated consumption, while inadequate recycling infrastructure compounds the challenge of sustainable waste

management (Muthu, 2014). This issue is particularly pressing in Melaka, a UNESCO World Heritage City, where cultural tourism and retail expansion have created a complex dynamic between economic development and environmental sustainability. Melaka's tourism industry, central to its local economy, attracts millions of domestic and international visitors annually (Tourism Malaysia, 2022). This influx has spurred increased demand for fashion-related retail products, including tourist-oriented clothing, accessories, and souvenirs. While tourism contributes positively to local economic vitality, it also accelerates fast fashion consumption and exacerbates textile waste (Ranjbari et al., 2021). However, tourism also offers a potential platform for promoting sustainable consumer behaviors, including the adoption of circular economy (CE) practices and heritage-inspired fashion. CE strategies centered on designing out waste, extending product lifecycles, and regenerating natural systems provide a viable pathway for sustainable development in urban and tourism contexts (Geissdoerfer et al., 2017).

The research problem addressed in this paper concerns the underexplored integration of tourism and circular economy principles in the context of fashion waste reduction and sustainability education. Although prior studies have examined CE in manufacturing and waste management sectors, limited attention has been given to its application within tourism-driven fashion consumption, especially in heritage cities like Melaka. This study seeks to fill that gap by conceptualizing a localized framework that aligns CE strategies with tourism development and consumer behavior change initiatives.

The theoretical foundation of this study is grounded in the Theory of Planned Behavior (TPB) (Ajzen, 1991), which posits that behavior is shaped by attitudes, subjective norms, and perceived behavioral control. By applying TPB, the study explores how tourists' and locals' environmental attitudes and social influences impact their fashion consumption and disposal habits. Integrating TPB with CE and sustainability frameworks enables a holistic understanding of behavioral drivers and systemic interventions. This paper argues that Melaka can serve as a strategic testbed for implementing tourism-integrated circular fashion systems that reduce waste and foster sustainability awareness among consumers. Through stakeholder engagement, heritage-based product innovation, and policy support, Melaka has the potential to become a model for sustainable tourism-retail synergies in Southeast Asia. The proposed conceptual model emphasizes the importance of cross-sector collaboration, cultural contextualization, and behavioral change mechanisms to drive sustainable fashion consumption in tourism-centric cities.

LITERATURE REVIEW

The intersection of circular economy (CE), sustainable tourism, and consumer behavior represents a critical area for environmental innovation, particularly in developing nations facing rapid urbanization and tourism growth. This literature review synthesizes key scholarly contributions to the fields of circular economy, fashion waste, behavioral theories, and tourism-led sustainability, highlighting theoretical insights and identifying gaps relevant to the context of Melaka, Malaysia.

Circular Economy and Fashion Waste

The circular economy has emerged as a transformative model for addressing the environmental impact of the fashion industry. Geissdoerfer et al., (2017) defines CE as a regenerative system aimed at minimizing resource input, waste, emissions, and energy leakage by narrowing, slowing, and closing material loops. In the context of fashion, CE promotes sustainable design, reuse, recycling, and circular business models. The relevance of this model for Melaka lies in its adaptability to tourism-based retail systems, where short-term consumption habits dominate. However, Geissdoerfer et al., (2017) note that while CE theory is robust, its practical application in small-scale, tourism-driven contexts remains underexplored. This gap justifies the need for localized CE frameworks that account for unique socio-economic and cultural factors. Niinimäki et al., (2020) extend this discussion by examining the environmental consequences of fast fashion, arguing that the sector's linear "take-make-dispose" model is inherently unsustainable. The authors advocate for systemic change through both industry transformation and consumer behavior modification. Their analysis underscores the importance of consumer education and participatory design principles that align with heritage-based fashion and tourist

education in Melaka. Nonetheless, the study focuses primarily on Western markets, leaving a gap in understanding how CE practices can be tailored to heritage tourism economies in Southeast Asia.

Theory of Planned Behavior (TPB) and Sustainable Consumption

Consumer behavior is central to the success of sustainability initiatives. Ajzen's (1991) Theory of Planned Behavior (TPB) provides a theoretical framework for predicting and influencing environmentally responsible behavior through three constructs: attitudes, subjective norms, and perceived behavioral control. TPB has been widely applied in sustainable consumption research, including fashion choices. For example, Han and Stoel (2017) found that perceived behavioral control and social norms significantly influence consumers' intentions to buy eco-friendly apparel. This insight is particularly relevant for Melaka, where tourists and locals may be swayed by social pressures and perceived access to sustainable options. However, TPB has been criticized for its limited capacity to account for habitual or unconscious behaviors, suggesting that supplementary strategies such as visual cues and incentives may be necessary in retail environments. Similarly, Joshi and Rahman (2015) conducted a comprehensive review of barriers to sustainable consumption in the fashion industry, highlighting factors such as lack of awareness, price sensitivity, and limited availability of green products. The authors argue for integrated interventions combining policy, education, and marketing. Their findings point to the need for holistic models such as the one proposed in this study that combine behavioral theories with systemic approaches like CE.

Tourism and Sustainable Retail Practices

Tourism plays a dual role in sustainability. On one hand, it amplifies consumption and waste, particularly in popular destinations like Melaka. On the other hand, it offers a platform for sustainability education and innovation. Gössling and Hall (2019) explored tourism's environmental footprint, noted that unsustainable shopping practices by tourists contributed significantly to local waste streams. They advocate destination-based sustainability policies, including eco-certifications, green retail incentives, and tourist education campaigns. While this perspective aligns with the goals of the current study, Gössling and Hall do not delve into the specific mechanisms by which tourism can promote circular fashion highlighting an opportunity for conceptual development. A more optimistic view is provided by Mihalič (2016), who emphasizes the potential of sustainable tourism to transform visitor behavior and community practices which introduces the concept of "responsible tourism consumption," where tourists act as sustainability ambassadors. In Melaka, this could translate into promoting heritage-inspired, upcycled fashion as souvenirs, linking local culture with eco-conscious consumption. However, empirical evidence on the effectiveness of such interventions in heritage cities is sparse, revealing a need for context-specific models.

Integration of CE and Tourism in Heritage Cities

Finally, Ranjbari et al., (2021) provides a systems-level view of CE applications in urban and tourism contexts. They argue for multi-stakeholder collaboration involving government, businesses, and communities to co-create sustainable systems. Their proposed framework includes product-service systems, eco-design, and digital platforms for circular tourism. While their model is comprehensive, it lacks cultural specificity, a crucial element in heritage cities like Melaka, where identity, tradition, and tourism are deeply intertwined. The present study seeks to address this by embedding CE strategies within Melaka's cultural and tourism framework.

Synthesis and Gaps

Across the reviewed literature, several themes emerge: the necessity of behavioral change (Ajzen, 1991; Han & Stoel, 2017), the importance of localized and culturally relevant CE practices (Geissdoerfer et al., 2017; Niinimäki et al., 2020), and the untapped potential of tourism as a vehicle for sustainability education (Mihalič, 2016; Gössling & Hall, 2019). However, significant gaps remain in applying these concepts holistically within tourism-centric heritage cities. Few studies have explicitly examined how tourism can be leveraged to drive circular fashion models and consumer sustainability awareness at the city level particularly in Southeast Asia.

This study aims to bridge these gaps by proposing a conceptual framework that integrates CE principles, TPB, and tourism-led education in Melaka. In doing so, it contributes to a culturally grounded, interdisciplinary model for addressing fashion waste and promoting sustainable consumption in heritage tourism contexts.

Conceptual Framework

This conceptual paper is underpinned by three primary theoretical lenses Circular Economy (CE) principles and Ajzen's (1991) Theory of Planned Behavior (TPB) alongside a tourism sustainability perspective. Together, these frameworks provide a holistic understanding of how fashion waste can be reduced, and sustainability awareness can be enhanced in a tourism-driven city like Melaka.

Circular Economy (CE) Principles

The Circular Economy model offers a systems-based approach to minimizing environmental impact by closing material loops, extending product life cycles, and designing out waste (Geissdoerfer et al., 2017). In the context of fashion, CE strategies involve reducing resource use, promoting upcycling, and implementing take-back systems or repair services (Niinimäki et al., 2020). Within Melaka's tourism sector, CE can be localized by promoting heritage-inspired upcycled fashion as souvenirs, establishing textile recycling hubs in shopping zones and integrating repair and redesign services into the retail landscape. These strategies not only address the issue of fashion waste but also create economic opportunities for local artisans and SMEs, contributing to inclusive and sustainable local development (Ranjbari et al., 2021).

Theory of Planned Behavior (TPB)

Ajzen's (1991) TPB provides a behavioral lens to understand how individual actions such as the purchase or disposal of fashion items are influenced by attitudes, subjective norms, and perceived behavioral control. TPB has been widely used in sustainability research, especially in predicting eco-conscious consumer behavior (Han & Stoel, 2017; Joshi & Rahman, 2015). In Melaka, the application of TPB can inform campaigns that could shape attitudes through awareness programs highlighting the environmental costs of fast fashion, and shift subjective norms via influencer-driven messages and community-led initiatives. Additionally, the theory could also enhance perceived control by making sustainable products more accessible and affordable, e.g., through green labeling or product certifications. Hence, by aligning behavioral interventions with CE initiatives, TPB can help explain and influence the uptake of sustainable fashion choices among both tourists and locals.

Tourism as a Catalyst for Circular and Sustainable Practices

Tourism is both a challenge and an opportunity in the context of sustainable consumption. While tourism can accelerate fashion consumption through retail-driven souvenirs and fast fashion purchases, it also provides a powerful platform for sustainability education (Gössling & Hall, 2019; Mihalič, 2016). Tourists are increasingly open to experiential and responsible consumption, which can be harnessed to promote circular fashion practices. In Melaka, tourism can be leveraged through: Sustainability-themed travel itineraries. Educational displays in museums or heritage centers. Eco-certified shops and sustainable fashion experiences.

Integrated Conceptual Framework

The conceptual framework (Figure 1) integrates the two theoretical pillars into a unified model. At its core is tourism, functioning as both a platform for outreach and a driver of consumption behavior. The framework suggests a cyclical feedback loop: Awareness campaigns rooted in CE and TPB influence consumer attitudes and norms. This fosters behavioral change, increasing demand for sustainable fashion which in response, businesses and artisans adopt CE practices. Consequently, the process will enhanced demand and participation, prompt policy support and reinforcing the system. This integrated approach positions Melaka as a model for tourism-integrated circular fashion systems, offering scalable strategies for other heritage cities.

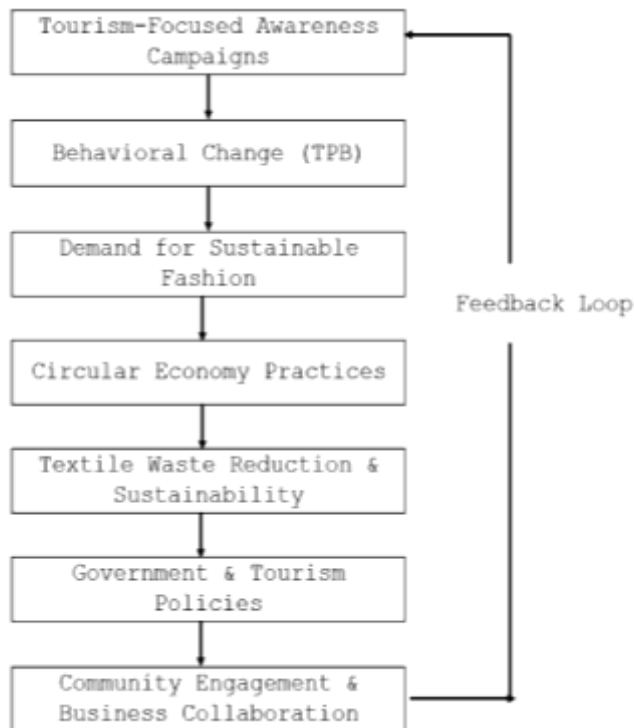


Figure 1: Integrated Conceptual Framework

RESEARCH METHODOLOGY

This study adopts a qualitative research methodology to explore the integration of tourism and circular economy (CE) strategies for reducing fashion waste and promoting sustainability awareness in Melaka, Malaysia. Qualitative research is particularly suitable for examining complex, context-dependent phenomena, especially where understanding subjective experiences, perceptions, and social behaviors is essential (Denzin & Lincoln, 2018). Given the study's focus on behavioral change, stakeholder perspectives, and policy environments within a unique tourism and heritage context, qualitative methods enable rich, nuanced insights that quantitative approaches alone cannot adequately capture.

Research Design: Exploratory and Interpretive

The study is grounded in an exploratory and interpretive design aimed at investigating how various stakeholders consumers, tourists, business owners, policymakers, and NGOs perceive and engage with sustainable fashion and CE principles. The primary objectives of this design are to (1) understand stakeholder perceptions of fashion waste and sustainability, (2) identify perceived barriers and enablers to sustainable fashion adoption, (3) explore the influence of tourism on consumer behavior, and (4) refine a conceptual framework for sustainable fashion in tourism-driven urban contexts.

Data Collection Methods

To obtain a comprehensive understanding of the research problem, three complementary qualitative methods were employed: semi-structured interviews, focus group discussions, and a case study approach. This study involved a total of 15 semi-structured interviews with key stakeholders, including tourism officials, municipal policymakers, fashion entrepreneurs, environmental NGO representatives, and both domestic and international tourists. Participants were selected through purposive sampling to capture a range of perspectives on sustainable fashion and circular economy practices. In addition, two focus group discussions were conducted with six to eight participants each, comprising university students, young professionals, and visitors to Melaka. Interviews and focus groups followed a standardized guide to maintain consistency and were audio-recorded with consent. All recordings were transcribed verbatim and analyzed using Braun and Clarke's (2006) six-phase thematic

analysis with the assistance of NVivo software. This process included initial coding, theme development, and peer debriefing to enhance credibility.

To provide a richer practical context, the study also incorporated case observations from established sustainability initiatives in other tourism-driven heritage cities, such as textile recycling programs in George Town and community-based upcycling projects in Chiang Mai. These comparative insights highlight practical pathways for Melaka while also revealing important constraints. Stakeholders noted challenges such as limited policy enforcement, technological gaps in textile recycling, and financial barriers for small and medium enterprises seeking to adopt circular practices. Including these details clarifies the research process and offers a balanced view of the structural and economic realities that influence the integration of circular economy strategies in tourism settings.

Semi-Structured Interviews

Semi-structured interviews were conducted to gather detailed, experiential accounts from individuals with diverse roles in Melaka's tourism and retail sectors. Participants included tourism officials, municipal policymakers, fashion entrepreneurs, environmental NGOs, tourists (both domestic and international), and local consumers. An interview guide with open-ended questions was developed to explore key themes such as attitudes towards sustainability, awareness of fashion waste, and existing CE practices. Sample questions included: *"How do you perceive the impact of tourism on fashion consumption in Melaka?"* and *"What are the main challenges in promoting sustainable fashion in your business or community?"*

Interviews were conducted either in-person or virtually, with each session lasting approximately 45–60 minutes. All interviews were audio-recorded and transcribed verbatim for subsequent thematic analysis. This method was selected for its flexibility and ability to elicit in-depth, contextual data (Kvale & Brinkmann, 2009).

Focus Group Discussions

Focus groups were used to explore shared beliefs and social dynamics related to fashion consumption and sustainability, particularly among local consumer groups. Two primary segments were targeted: university students and young professionals residing in Melaka, as well as tourists visiting the city. Each focus group comprised 6–8 participants and was facilitated using a structured moderator guide addressing topics such as shopping habits, social norms, and responses to proposed CE initiatives (e.g., green shopping routes, upcycled souvenirs). The focus group sessions lasted between 60 and 90 minutes and were audio-recorded with consent. This method allowed for the observation of consensus-building, disagreements, and peer influences, providing valuable insights aligned with the Theory of Planned Behavior (Ajzen, 1991), particularly regarding subjective norms and social pressures.

Case Study Approach

A case study strategy was adopted to contextualize Melaka's unique socio-cultural and economic landscape as a heritage city and tourism hub. Data was collected from multiple sources, including policy documents, municipal sustainability reports, promotional materials, and direct field observations in key retail and tourism districts (e.g., Jonker Street, Dataran Pahlawan Mall). These data were triangulated with insights from interviews and focus groups to develop a holistic understanding of how policy, infrastructure, and stakeholder initiatives interact to shape sustainable fashion practices. The case study method enables a deep exploration of how global concepts like the circular economy can be localized within a culturally specific and tourism-intensive environment (Yin, 2014).

Data Analysis: Thematic Approach

Thematic analysis was employed to systematically identify and interpret patterns within the qualitative data (Braun & Clarke, 2006). The process began with familiarization through repeated reading of interview and focus group transcripts. Initial codes were generated based on recurring concepts, such as "awareness of eco-fashion," "barriers to recycling," and "influence of tourism." These codes were then grouped into broader themes such as

“behavioral motivators,” “infrastructure limitations,” and “policy support” that correspond with the components of the proposed conceptual framework. The use of qualitative data analysis software (e.g., NVivo) facilitated the organization and retrieval of coded data, enhancing analytical rigor and transparency.

Trustworthiness and Validity

To ensure the credibility and reliability of the research findings, several strategies were implemented. Triangulation was achieved by drawing data from multiple sources and methods, interviews, focus groups, documents, and observations. Member checking was conducted by sharing preliminary findings with selected participants to verify the accuracy of interpretations. Peer debriefing involved discussing emerging themes and interpretations with academic colleagues and subject matter experts to reduce researcher bias. An audit trail documenting data collection, coding, and theme development processes was maintained to ensure methodological transparency.

Ethical Considerations

Ethical principles were adhered to throughout the research process. Informed consent was obtained from all participants, who were assured of their anonymity and the confidentiality of their responses. Participants were also informed of the study’s objectives and their right to withdraw at any time. Where applicable, ethics approval was sought from relevant institutional review boards to ensure compliance with academic research standards. The qualitative methodology employed in this study offers a robust foundation for exploring the intersection of tourism, consumer behavior, and circular economy practices in Melaka. Through a triangulated and interpretive approach, the study captures the nuanced experiences, attitudes, and contextual factors shaping sustainable fashion adoption in a heritage city context. These insights directly inform the development and refinement of a contextually grounded conceptual framework for sustainable tourism-retail systems.

Expected Results and Integration with the Conceptual Framework

This study is expected to generate empirically grounded, context-specific findings that both validate and refine the proposed conceptual framework for integrating circular economy (CE) strategies and sustainable fashion practices within Melaka’s tourism-driven retail ecosystem. The anticipated results are structured around five core dimensions of the framework: (1) consumer awareness, (2) tourism as a behavioral catalyst, (3) CE infrastructure and policy support, (4) behavioral drivers (via TPB), and (5) stakeholder collaboration. These dimensions function as interdependent variables within a dynamic sustainability system, producing reinforcing feedback loops that support the transformation of Melaka into a circular fashion hub.

Consumer Awareness and Sustainability Literacy

The findings are likely to reveal heterogeneous levels of awareness and understanding of CE principles among various stakeholder groups. While local entrepreneurs and policymakers may demonstrate moderate literacy regarding recycling, upcycling, and sustainable production, tourists and local consumers are expected to exhibit superficial or limited awareness primarily associating sustainability with organic materials rather than systemic lifecycle approaches. This outcome supports the conceptual proposition (A1) that:

Low Sustainability Awareness $\Rightarrow$ Reduced Adoption of Circular Consumption Practices

Thus, targeted educational interventions and awareness campaigns are posited as foundational to catalyzing demand for sustainable fashion.

Tourism as a Double-Edged Driver of Fashion Consumption

Consistent with the framework’s proposition (T1), tourism is anticipated to function dually as both a driver of fast fashion demand and a lever for sustainability transformation. On one hand, tourism inflows are expected to amplify textile waste through impulse fashion purchases; on the other, the tourism experience presents

opportunities to embed sustainability through curated green shopping routes, eco-conscious souvenirs, and heritage-inspired upcycled products. These insights reinforce the functional relationship:

Tourism Exposure + Sustainability Framing $\Rightarrow$ Increased Sustainable Purchasing Behavior

Such findings would empirically validate the model's emphasis on tourism-focused awareness campaigns as a critical point of leverage.

Structural Barriers to Circular Economy Implementation

The study is expected to identify key structural and systemic constraints that hinder CE adoption within Melaka's fashion and retail sectors. These barriers include (a) insufficient textile recycling infrastructure, (b) limited access to sustainable raw materials, (c) absence of supportive policy instruments, and (d) lack of financial incentives for SMEs. In line with the model's policy dimension (**P1**), the relationship is conceptualized as:

Low Policy and Infrastructure Support $\Rightarrow$ Limited CE Practice Adoption Among SMEs

This underscores the necessity for coordinated government action, infrastructural investment, and fiscal incentives to accelerate CE transitions.

Behavioral Determinants of Sustainable Consumption: TPB Application

Applying Ajzen's (1991) Theory of Planned Behavior (TPB), it is anticipated that three psychological components; attitudes toward sustainability, subjective norms, and perceived behavioral control will emerge as significant predictors of consumer behavior. Endorsements by influencers, peer support, and availability of affordable eco-products are expected to positively influence behavioral intentions. This relationship may be formally represented as:

$$BI = f(A, SN, PBC)$$

Where:

BI = Behavioral Intention toward sustainable fashion consumption

A = Attitude toward eco-conscious behavior

SN = Subjective Norms (peer/influencer influence)

PBC = Perceived Behavioral Control (affordability, access, knowledge)

The results are likely to validate the integration of TPB into the conceptual framework and its application to tourism-induced consumer environments.

Community Engagement and Multi-Stakeholder Collaboration

Community participation is anticipated to emerge as a significant enabler of sustainable fashion transformation. Partnerships between SMEs, artisans, NGOs, academic institutions, and tourism authorities are expected to facilitate innovation, resource pooling, and cultural alignment of CE practices. As modeled in the framework:

High Stakeholder Engagement $\Rightarrow$ Scalable and Culturally Embedded CE Initiatives

Events such as fashion swaps, eco-festivals, and sustainability workshops embedded in tourism spaces may serve as important mechanisms for behavioral normalization and collective action.

Feedback Loops and Dynamic Interactions

The anticipated findings are expected to support the conceptual framework's systems-based view, wherein feedback loops reinforce sustainable transformation. For instance:

Increased awareness ($A \uparrow$) → higher sustainable demand → business adoption ($B \uparrow$) → more accessible
eco-products → enhanced perceived control ($PBC \uparrow$) → further behavior change ($BI \uparrow$)

This chain reflects a self-reinforcing loop that advances the transition to a circular fashion ecosystem. The model thus demonstrates dynamic interactions among tourism, behavior, and structural enablers.

DISCUSSION

This study aimed to explore the integration of tourism and circular economy (CE) strategies to address fashion waste and promote consumer sustainability awareness in Melaka; a heritage-rich, tourism-driven city in Malaysia. The findings from stakeholder interviews, case study and focus group discussions provide critical insights into the viability and adaptability of the proposed conceptual framework, which combines CE principles, the Theory of Planned Behavior (TPB), and tourism as a vehicle for sustainability transformation. The framework not only contributes to theoretical discourse but also offers practical pathways for sustainable development in heritage cities.

The proposed framework advances existing theoretical understanding by merging two often independently applied models: the circular economy paradigm (Geissdoerfer et al., 2017) and the Theory of Planned Behavior (Ajzen, 1991), contextualized within a tourism economy. While CE is primarily discussed in industrial and urban sustainability literature, this study extends its relevance to the tourism and fashion retail sectors—areas typically dominated by linear consumption models (Niinimäki et al., 2020). By embedding CE into the tourism landscape, the framework introduces a culturally embedded sustainability strategy that is both community-driven and economically responsive. Moreover, the integration of TPB enhances the behavioral dimension of CE adoption. The study's findings reaffirm TPB's constructs attitudes, subjective norms, and perceived behavioral control as critical factors influencing sustainable fashion choices. For instance, tourists' and locals' decisions to engage with sustainable fashion were significantly influenced by influencer endorsements and visible green certifications, underscoring the importance of social norms and accessible information. These findings align with prior research by Han and Stoel (2017), who emphasized the mediating role of perceived behavioral control in eco-fashion consumption. The framework thus enriches behavioral theories by demonstrating how tourism-focused interventions can shape sustainable behaviors in situ.

A major strength of the framework lies in its adaptability to local cultural and economic contexts. By emphasizing heritage-inspired sustainable fashion, the model leverages Melaka's identity as a UNESCO World Heritage City to promote eco-conscious shopping as a form of cultural engagement. This dual positioning combining environmental responsibility with authentic tourism experiences has the potential to make sustainable fashion both desirable and meaningful to consumers. Another key strength is the framework's systemic orientation. It accounts not only for consumer behavior but also for structural and institutional factors, such as policy incentives, business capacity, and infrastructure development. For example, participants in the study highlighted the importance of tax incentives, fashion swaps, and university-NGO collaborations as enablers suggesting that behavior change must be supported by enabling environments and cross-sector collaboration. The feedback loop embedded in the framework also reflects a dynamic system-thinking approach. As awareness grows through tourism campaigns, demand for sustainable products increases, which in turn encourages SMEs and artisans to adopt CE strategies creating a self-reinforcing cycle of change.

While the proposed framework highlights the opportunities for integrating tourism and circular economy strategies, several practical barriers must be acknowledged to present a balanced view. Local retailers may resist adopting sustainable fashion practices because of concerns about higher costs, changes in supply chains, or uncertainty about consumer demand. Small and medium-sized businesses may also find it difficult to invest in recycling systems or eco-friendly production without clear financial support. Another challenge involves

maintaining visitor interest and participation, as tourists may prefer convenience or low prices over sustainable options. To improve the general relevance of the framework, future research could compare Melaka's approach with other heritage cities in Malaysia and across Southeast Asia. Such comparisons would help identify which strategies are most adaptable to different cultural and economic settings. In addition, incorporating digital solutions—such as mobile applications or interactive online platforms—could make sustainability education more engaging. For example, an app could guide visitors to eco-friendly shops, share stories about upcycled products, and provide simple tips for reducing textile waste. Integrating these elements would not only strengthen the practical impact of the framework but also enhance the appeal of sustainable fashion initiatives among both tourists and residents.

Drawing on the insights derived from this study and reflecting Melaka's distinct identity as both a UNESCO World Heritage City and a prominent cultural tourism destination, the following recommendations are proposed to support the integration of sustainable fashion and circular economy (CE) practices within its tourism-driven retail sector:

Strengthen Consumer Education and Sustainability Awareness Through Cultural Integration

To foster a culture of sustainable consumption, Ministry of Tourism, Arts and Culture Malaysia, MOTAC Melaka Office, in collaboration with heritage institutions, should embed sustainability messages within existing cultural platforms such as museums, heritage centers, and tourist information kiosks. By aligning sustainable fashion with Melaka's historical narratives and traditional craftsmanship, educational initiatives can frame eco-conscious consumption as an extension of local identity. This culturally tailored approach can engage both tourists and residents, enhancing the perceived relevance and authenticity of sustainable fashion practices.

Expand Textile Waste Management Infrastructure in Tourism-Intensive Areas

Given the high volume of textile waste generated through tourism-driven retail activity, it is imperative to establish accessible textile recycling and donation facilities in strategic, high-traffic locations. Areas such as Jonker Street, Dataran Pahlawan Mall, and the A'Famosa district present ideal sites for the installation of clearly marked textile recycling bins and donation points. These efforts should be complemented by partnerships with local non-governmental organizations (NGOs), artisans, and social enterprises to organize repair workshops and upcycling demonstrations, thereby promoting a participatory approach to waste reduction and skill development.

Introduce Localized Policy Instruments and Certification Schemes for Sustainable Fashion Enterprises

To encourage the adoption of CE principles among small and medium-sized enterprises (SMEs), the Melaka state government should consider implementing targeted financial incentives such as tax exemptions, start-up grants, or low-interest loans. These should specifically support businesses engaged in heritage-inspired upcycled fashion and environmentally sustainable production methods. Furthermore, the development of a region-specific green certification program—endorsed by local authorities—can enhance consumer trust, improve brand visibility for eco-conscious retailers, and position Melaka as a frontrunner in sustainable tourism retail.

Promote Multi-Stakeholder Collaboration to Foster Local Innovation

Robust collaboration between key stakeholders such as local artisans, fashion entrepreneurs, tourism authorities, academic institutions, and NGOs is essential to building a resilient and innovative sustainable fashion ecosystem. The establishment of formal networks or working groups could facilitate knowledge exchange, resource sharing, and co-creation of sustainable products. Public events such as eco-fashion festivals, design competitions, and clothing swap initiatives hosted in iconic heritage spaces can further stimulate community engagement while attracting tourist interest.

Leverage Melaka's Cultural Tourism Appeal to Advance Sustainable Retail Experiences

Melaka's strong branding as a heritage destination offers a unique opportunity to promote sustainable consumption practices through curated tourist experiences. The development of "green shopping routes"

featuring certified eco-friendly retailers, upcycled fashion boutiques, and artisanal souvenir outlets can cater to environmentally conscious tourists seeking authentic cultural engagement. Integrating these routes into tourism marketing campaigns reinforces the alignment between sustainability and Melaka's cultural identity, strengthening the city's competitive advantage in the global tourism market.

CONCLUSION

This study contributes a multidimensional conceptual framework that bridges theoretical gaps between circular economy, behavioral science, and tourism studies. It underscores the potential of heritage tourism as a transformative force in promoting sustainable fashion and reducing textile waste. While limitations remain, particularly regarding behavior change and structural constraints, the framework offers a scalable and culturally sensitive approach that can inform policy, guide entrepreneurial innovation, and enrich academic discourse on sustainability in heritage cities. In sum, the study positions Melaka as a viable model for heritage cities seeking to transition toward sustainable and circular tourism economies. By offering a robust conceptual framework grounded in Malaysia's cultural and policy context, the research contributes meaningfully to both academic literature and real-world implementation of the SDGs, particularly SDG 11, 12, and 8, within the Malaysian development narrative.

Implications And Contributions of Study

This study contributes both theoretically and practically to the discourse on sustainable fashion and circular economy (CE) integration within tourism-centric urban economies, particularly in the context of developing countries. By situating the analysis within Melaka, a UNESCO World Heritage City and prominent cultural tourism destination in Malaysia, the research advances the understanding of how localized, culturally embedded CE strategies can be operationalized to address textile waste and promote sustainable consumer behavior.

From an academic perspective, this study advances the integration of sustainability science with tourism and fashion studies by offering a culturally sensitive, behaviorally informed, and policy-aligned model for reducing fashion waste in urban tourism contexts. The research methodology incorporating semi-structured interviews, focus groups, and contextual case analysis ensures methodological rigor and depth, offering a model that can be adapted and applied in other heritage cities across Southeast Asia and beyond.

Theoretical Contributions

The study's primary theoretical contribution lies in the development and contextual validation of an integrated conceptual framework that combines Circular Economy (CE) principles with the Theory of Planned Behavior (TPB) within the socio-economic setting of tourism. While previous studies have examined sustainable consumption in isolated contexts of either tourism (Font & McCabe, 2017) or fashion (Brydges, 2021), the present research addresses the confluence of both sectors, highlighting the interdependencies that shape consumer behavior and institutional responses in heritage cities. Moreover, the adaptation of TPB to incorporate tourism-specific variables such as cultural authenticity, tourist-local interactions, and place-based identity extends the model's applicability to new domains. The framework also contributes to emerging scholarship on CE transitions in the Global South by providing a multi-actor model that integrates consumer psychology, public policy, tourism infrastructure, and SME innovation.

Policy and Practical Implications

Aligned with Malaysia's national sustainable development trajectory, the findings of this study hold practical relevance for policymakers, tourism authorities, and local enterprises. Specifically, the study supports the objectives outlined in the Twelfth Malaysia Plan (12MP) and the Malaysia SDG Roadmap Phase II (2021–2025) by offering evidence-based strategies for embedding CE practices in tourism-related industries.

a. Alignment with SDG 12: Responsible Consumption and Production

By identifying consumer barriers and enabling sustainable fashion behavior, the study provides actionable

insights for advancing Target 12.5 (reducing waste generation) and Target 12.8 (raising awareness for sustainable lifestyles). Strategies such as the introduction of green retail certifications, fashion upcycling programs, and sustainability-focused tourism campaigns contribute directly to national targets under this goal.

b. Alignment with SDG 11: Sustainable Cities and Communities

The integration of fashion sustainability into Melaka's urban and tourism planning processes aligns with Target 11.4 (protecting cultural and natural heritage) and Target 11.6 (reducing environmental impact). The proposed "green shopping routes" and culturally rooted sustainable souvenirs position Melaka as a replicable model for other heritage cities seeking to balance tourism growth with environmental responsibility.

c. Alignment with SDG 8: Decent Work and Economic Growth

The research also supports Target 8.9, which advocates sustainable tourism that promotes local culture and community-based employment. By promoting heritage-based upcycled fashion and capacity building among local artisans and SMEs, the study outlines pathways for inclusive green economic development in line with Malaysia's National Tourism Policy 2020–2030.

d. Strategic Integration with National Policies

The conceptual model developed in this study complements the Pelan Hala Tuju Peralihan Tenaga Negara (NETR), particularly Mission 3 on economic reformation through green growth. The framework proposes CE-driven innovation in the fashion and tourism sectors, fostering resource efficiency, waste minimization, and sustainable entrepreneurship. In addition, the study contributes to Enabler 5 of the Twelfth Malaysia Plan (12MP), which emphasizes expanding the circular economy through industry transformation, policy incentives, and cross-sector partnerships. The findings provide empirical grounding for policy interventions such as tax incentives for eco-fashion enterprises, enhanced recycling infrastructure, and the introduction of green labels in retail tourism.

Practical Contribution

Practically, the findings offer a set of strategic recommendations for: (a) Local and federal policymakers: to implement localized CE regulations and SME incentives., (b) Ministry of Tourism, Arts and Culture Malaysia, MOTAC Melaka Office: to design educational campaigns and eco-tourism experiences., (c) Entrepreneurs and artisans: to capitalize on cultural identity through sustainable product design and (d) Academic institutions and NGOs: to facilitate capacity building, community engagement, and knowledge dissemination.

The practical applications of this framework are promising, particularly for tourism-centric cities seeking localized sustainability solutions. For policymakers, the model provides a roadmap for aligning tourism development with environmental goals suggesting interventions such as green shopping routes, sustainability-themed festivals, and integrated recycling infrastructure. For Ministry of Tourism, Arts and Culture Malaysia, MOTAC Melaka Office, it offers strategies to market Melaka not just as a cultural destination, but also as a hub for ethical consumption. Entrepreneurs and SMEs can also benefit from this framework by positioning sustainable fashion as a value-added experience for tourists. The emphasis on heritage and craftsmanship aligns well with global trends in conscious consumerism, potentially opening new markets and revenue streams.

Limitation Of Study and Future Research Direction

Despite its strengths, the framework is not without limitations. One notable weakness is the assumption that tourism can be easily redirected from a driver of fast fashion consumption to a platform for sustainability. In practice, deeply embedded habits, convenience, and price sensitivity particularly among short-term visitors pose significant challenges. As the study revealed, many tourists prioritize affordability and convenience over environmental concerns, a sentiment echoed in broader sustainability research (Joshi & Rahman, 2015). Additionally, the framework's reliance on behavioral change strategies may underestimate the structural barriers faced by SMEs, such as limited financial resources, inadequate infrastructure, and lack of technical knowledge.

Without robust policy support and funding mechanisms, CE adoption may remain aspirational rather than actionable for many small businesses. The framework is also conceptual in nature, which means its practical efficacy has not yet been empirically validated. While qualitative data offers strong foundational insights, future research should pilot elements of the model in real-world settings to test its impact and scalability.

REFERENCES

1. Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
2. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
3. Brydges, T. (2021). Closing the loop on fashion waste: Sustainable production and consumption in the circular economy. *Journal of Cleaner Production*, 287, 125579.
4. Denzin, N. K., & Lincoln, Y. S. (Eds.). (2018). *The SAGE handbook of qualitative research* (5th ed.). Sage Publications.
5. Economic Planning Unit. (2021). *Twelfth Malaysia Plan 2021–2025: A prosperous, inclusive, sustainable Malaysia*. Prime Minister's Department, Malaysia.
6. Ellen MacArthur Foundation. (2017). *A new textiles economy: Redesigning fashion's future*. <https://ellenmacarthurfoundation.org/a-new-textiles-economy>
7. Font, X., & McCabe, S. (2017). Sustainability and marketing in tourism: Its contexts, paradoxes, approaches, challenges and potential. *Journal of Sustainable Tourism*, 25(7), 869–883.
8. Geissdoerfer, M., Savaget, P., Bocken, N. M. P., & Hultink, E. J. (2017). The Circular Economy – A new sustainability paradigm? *Journal of Cleaner Production*, 143, 757–768.
9. Gössling, S., & Hall, C. M. (2019). *Sustainable tourism: A global perspective*. Routledge.
10. Han, T. I., & Stoel, L. (2017). Explaining socially responsible consumer behavior: A meta-analytic review of the theory of planned behavior. *Journal of International Consumer Marketing*, 29(2), 91–103.
11. Joshi, Y., & Rahman, Z. (2015). Factors affecting green purchase behaviour and future research directions. *International Strategic Management Review*, 3(1–2), 128–143.
12. Kvale, S., & Brinkmann, S. (2009). *InterViews: Learning the craft of qualitative research interviewing* (2nd ed.). Sage Publications.
13. Mihalič, T. (2016). Sustainable-responsible tourism discourse – Towards 'responsustainable' tourism. *Journal of Cleaner Production*, 111, 461–470.
14. Ministry of Energy and Natural Resources. (2023). *National Energy Transition Roadmap (NETR): Phase 1 & 2*. Putrajaya: Government of Malaysia. <https://www.mestec.gov.my/netr>
15. Ministry of Tourism, Arts and Culture Malaysia. (2020). *National Tourism Policy 2020–2030*. Putrajaya: Government of Malaysia. <https://www.motac.gov.my/en/policies/national-tourism-policy>
16. Muthu, S. S. (2014). *Assessing the environmental impact of textiles and the clothing supply chain*. Woodhead Publishing.
17. Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T., & Gwilt, A. (2020). The environmental price of fast fashion. *Nature Reviews Earth & Environment*, 1(4), 189–200.
18. Ranjbari, M., Esfandabadi, Z. S., Zanetti, M. C., Tabatabaei, M., & Aghbashlo, M. (2021). Three pillars of sustainability in the wake of COVID-19: A systematic review and future research agenda for sustainable development. *Journal of Cleaner Production*, 297, 126660.
19. Tourism Malaysia. (2022). *Tourism Malaysia Annual Report 2022*. Ministry of Tourism, Arts and Culture Malaysia.
20. United Nations Country Team Malaysia. (2021). *Malaysia SDG Roadmap Phase II (2021–2025)*. Putrajaya: United Nations Malaysia. <https://malaysia.un.org/en/126249-malaysia-sdg-roadmap-phase-ii-2021-2025>
21. Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Sage Publications